Summer 2012
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NATIONAL WEATHER SERVICE - MEDFORD, OREGON

THE CRATER CHRONICLE

NWS Medford Radar to Receive Upgrade

By Connie Clarstrom, Meteorologist

The National Weather Service WSR-88D Doppler radar located in Southern Oregon will soon be enhanced to incorporate a new technology called dual-polarization, or dual-pol. This is a significant upgrade in technology and is part of the NWS vision to build a Weather-Ready Nation to better protect lives and livelihoods.

The upgrade itself is scheduled for two weeks from August 19th to September 2nd. During the upgrade, users can expect NWS Medford radar data to be temporarily unavailable. Forecasters will incorporate spotter reports, observations, and satellite data to provide necessary warnings during severe thunderstorms or flash flooding.

Once the upgrade is complete, the NWS Medford radar will be able to provide more information than ever about storms. Unlike conventional Doppler radars, which only transmit and receive pulses of radio waves in a horizontal orientation, dual-polarization radars can transmit and receive pulses in both a horizontal and vertical orientation. As a result, they can tell us more about the size, shape and variety of particles in storms.

The NWS Medford radar, located at the top of Mount Ashland, is scheduled to be updated to new technology in the late summer.

The dual polarization radar will provide forecasters with 14 new products to examine storms with and will help forecasters identify the type of precipitation that is falling, while also improving rainfall estimates. This will help improve our ability to assess severe weather, including detecting hail associated with severe thunderstorms, heavy rain associated with flooding, and heavy snow in winter storms. The new data on precipitation type will also be available to view on the radar page at the NWS Medford website. You can access this by visiting: **http://radar.weather.gov**.

Additional details on the dual polarization upgrade, including training for both meteorologists and non-meteorologists, may be found on the NWS Warning Decision Training Branch website: **http://www.wdtb.noaa.gov/courses/dualpol/outreach/**.

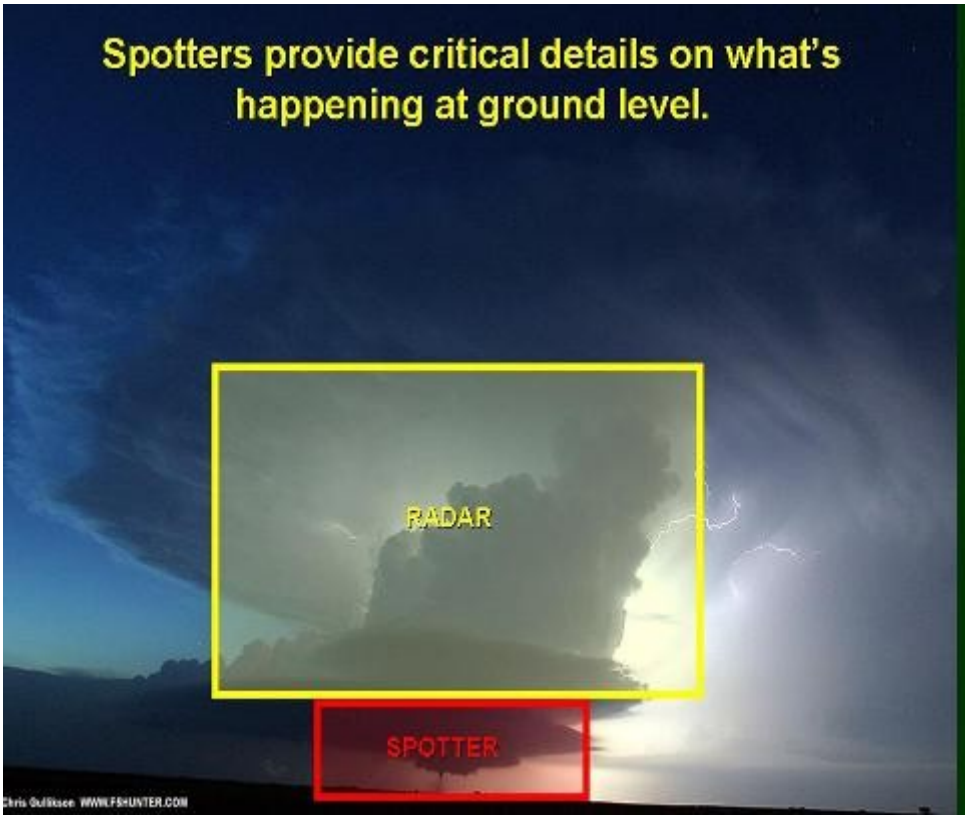
INSIDE THIS ISSUE

Summer Began June 20 at 4:09 pm PDT.

Spotter Reports Even More Important This Summer

By Sven Nelaimischkies, Senior Meteorologist

Weather spotters are integral to the National Weather Service's warning program, providing reports of severe weather for us to issue or verify warnings. When warnings are in effect, a spotter report that either confirms the warning or shows the conditions are not occurring helps us to adjust our warnings as well as improve our forecasts and products. You are the eyes on the ground, and without you, we are just estimating what is really happening.



This summer, from August 20th to September 2nd, our radar will be upgraded to a new technology called dual-polarization. However, installing this capability cannot be done with the radar in use. This means NWS Medford's radar will not be operational during this two-week period in the late summer. The loss of this data, although very necessary, will leave us at a disadvantage during this period.

There are three sides of the warning triangle: 1) our radar; 2) operational tools like satellite and computer models, and 3) you, the weather spotter. The loss of the radar during this upgrade will make your reports even more essential, and you will be needed more than ever to help us protect the safety of our neighbors and community. During this outage, the National Weather Service in Medford will post on our web page, our Facebook page, and our Twitter feeds, and we will send email notifications to all of our spotters on days that we are expecting a possibility of severe weather to activate the spotter network. If you have a cell phone, you can post pictures of the storms on our Facebook page: **http://www.facebook.com/NationalWeatherService.Medford.gov**. Our new Twitter feed may also be used at: **http://twitter.com/NWSMedford**.

We always appreciate hearing from our spotters, and during this critical time, your reports are needed more than ever. Thank you for volunteering your time!

Weather Spotter Report Information

What to Report

- **Tornadoes or funnel clouds are observed;**
- **Hail ½-inch in diameter or larger is observed;**
- **Rainfall at a rate of ½-inch or more an hour falls;**
- **Flash flooding or street flooding is seen;**
- **Wind gusts of 35 mph or more occur.**

How to Report

- **Dial the 1-800 weather spotter phone number given to you during training;**
- **Call NWS Medford's public phone line - (541) 773-1067;**
- **Post on our Facebook page;**
- **Notify us through Twitter.**

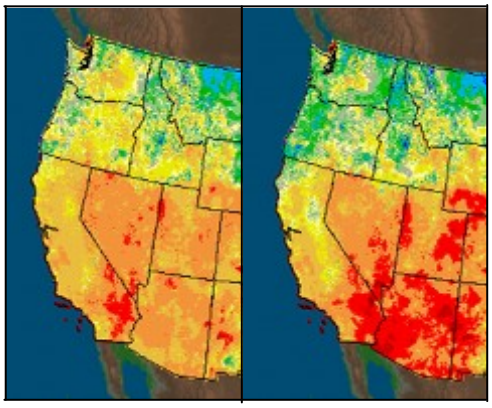
Climate Update: What Does the Summer Hold?

Brett Lutz, Meteorologist

Wet Season Review

After an unusually warm September 2011, the NWS Medford forecast area has experienced cooler conditions compared to climatology than the rest of the country has. While mean temperatures have not differed more than a degree or two Celsius (1.8-3.6° F) from normal since October 1, the combined effects of a moderate La Nina and a strong cool phase of the Pacific Decadal Oscillation (PDO) have generally kept areas from the Cascades westward cooler than normal. East of the Cascades, temperatures have been near normal to slightly above normal.

Precipitation has been quite variable this year. After a dry September, October and November yielded some hope for a near normal year on the West Side, but the East

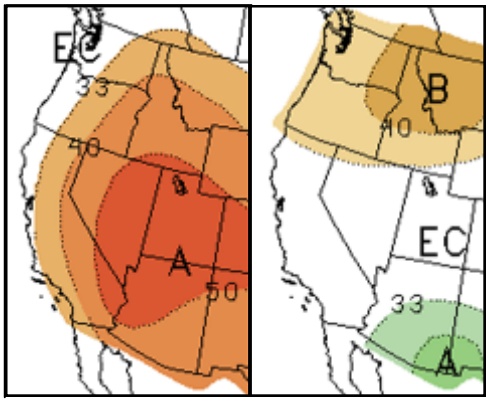


Percent of normal precipitation for the current water year (since Oct. 1, left) and year-to-date (right).

Side was quite dry. Dry weather suddenly returned around Thanksgiving, and through the 28th, the area was on track to have the driest December on record. On the 27th through the 30th, a series of storms related to the Madden Julian Oscillation brought precipitation with unusually high snow levels but still yielded the 9th-driest December on record. From November 28 through January 15, Medford received less than one inch of water, which is the driest it has ever been during this period since records began in 1912. The Arctic Oscillation was in an unusually strong positive phase during this period. Never in the climate record have we been able to make up Wet Season deficits of the magnitude we had at that point in the Wet Season (Jan. 15). However, since January 15, most areas from the Cascades westward have been significantly wetter than normal. In Medford, precipitation this calendar year through June 23 has been 140% of normal and the 7th-wettest on record for that period; we are now less than one inch from normal for the Wet Season (95% of normal since Sept. 1). This Spring was the 3rd-wettest spring in a row for Medford, ranking 16th in the 99-year climate record. While the West Side has mostly recovered from early moisture deficits, southeastern portions of our area have continued to be unusually dry. The Cascades tend to be the dividing line for precipitation anomalies for most La Ninas, except when they are strong. Moderate to severe drought currently exists in much of Klamath, Lake, and Modoc counties.

Seasonal Outlook

Lingering cold water anomalies and the expected mean flow over the region this Summer are most likely to prevent areas west of the Cascades from having above average temperatures for the combined Summer months of July, August, and September. The closer one is to the coast, the higher the chances that temperatures could be cooler than normal for this period. East of the Cascades, moisture deficits and climate warming trends are most likely to result in above average temperatures. Climate models indicate precipitation is most likely to be below normal for the forecast area for this same period. It should be noted that, altogether, it is expected that this July through September will be warmer and closer to normal than last summer. This means Medford is likely to reach 100F this year, as one would also expect from looking at the climate record.



Three-month outlook (July/August/September) for temperatures (left) and precipitation (right).

By this Autumn, there is a good chance that El Nino may develop and persist for the upcoming 2012-13 Wet Season.

Fire Season

2011 was a quiet fire year in our forecast area, with the exception of Modoc county, where unusually dry conditions in the early growing season resulted in large fires. September did result in a number of lightning fires, especially in Umpqua National Forest, but the cool and generally wet summer resulted in moist vegetation, which kept fire spread minimal even in the unusually hot and dry September. With greater moisture deficits and warmer temperatures expected this Summer as compared to last Summer, fire season is expected to be a bigger concern this year, especially east of the Cascades. Recent wet weather on the West Side will delay large fire concerns until at least mid-July, while fires are already of significant concern in our drought areas. Please remember that it typically does dry out enough over all of our area such that fires are of major concern mid- to late-Summer (and in some years, sooner). Keep grasses short when they are drying out, and be mindful of fire potential. Often times the only piece missing in our area for large fire and smoke problems in the mid- to late- Summer is ignitions, so don't be the ignition source!

Coming Soon: Weather Warnings on the Go!

Reprinted From NOAA Feature Stories

Imagine this: You're driving down the highway, humming along to your favorite tunes, when the cell phone stowed in your bag suddenly makes a strange noise. To investigate, you take the next exit and safely pull over to check the screen. Good thing you did: Your phone just alerted you to a tornado a few miles away in the same county you're driving through. Sound plausible? It is. This year, America's wireless industry is rolling out a new nationwide text emergency alert system, called Wireless Emergency Alerts, which will warn you when weather threatens.

The text alert service is free and automatic – there's no need to sign up or download an app. As long as your cell phone is capable of receiving text messages, you'll get wireless alerts for the most dangerous types of weather from NOAA's National Weather Service no matter where you are, just as soon as the new service is available in your area.

NOAA's NWS will broadcast warnings for weather emergencies that are most dangerous to life and property: tornadoes, flash floods, hurricanes, extreme wind, blizzards and ice storms, tsunamis, and dust storms. (Severe thunderstorm warnings will not be part of the initial rollout of broadcast messages because they are so frequent; however, these will continue to be broadcast by NOAA Weather Radio, media outlets and Internet-based services.)

How Weather Text Alerts Work

If you are at home or traveling with your cell phone through an area where a weather warning has been issued, your phone will pick up alerts broadcast by nearby cell towers. Those towers will broadcast the message much like an AM/FM radio station, and cell phones within range will immediately pick up the signal — provided they are enabled to receive text alerts. When your phone receives a message, it will alert you with a unique ring tone and vibration.

The message will look like a text, but it's not a traditional text message most people are used to. This text message will automatically pop up on your cell phone's screen; you won't have to open it up to read it. Regardless of where you are, this service will send alerts appropriate to your real-time geographic location. For example, if a person with a WEA-capable phone from New Jersey happens to be in Southern California during and after an earthquake, she will receive an "Imminent Threat Alert" on her device.

Common Questions & Answers

Q: What should I do when I receive a message? A: It depends. In most cases, these 90-character messages are a "heads up" to prompt you to seek further information about the threat. In the case of an extreme and imminent danger – such as a large tornado in the area – the message will advise you to seek shelter immediately.

Q: Who is behind the text alert system? A: The new weather messages are part of the broader Wireless Emergency Alerts initiative – a partnership among the wireless industry, the Federal Communications Commission (FCC) and the Federal Emergency Management Agency, or FEMA. NOAA's National Weather Service is one of many agencies authorized to send emergency alerts to cell phones through this new system. These alerts will improve the way the government communicates to the public about hazards that pose a significant threat to life and property, and help people plan for and stay safe when they are at risk for dangerous situations — even in their own homes. You might also receive messages regarding Amber alerts, local hazards (e.g., chemical spills), and even national emergencies.

The 'Fine Print'

The Wireless Emergency Alert system relies on "best-effort" networks, so delivery of alerts at a given place and time is not guaranteed. The new alert system is not a replacement for other alert systems, and you should not rely on it as a sole source of emergency information. A weather alert sent through WEA is intended to notify the public that a warning has been issued and that you should seek additional information. Remember: Not all phones are capable of receiving Wireless Emergency Alerts.

Cell service customers can opt out of weather alerts, but we strongly discourage you from doing so. People will have the timely information they need to make smart decisions about how to protect themselves, their families, their friends and neighbors, and their personal property. Find out if your phone is WEA-capable and when the alert system will be available in your area. Contact your wireless carrier today or visit CTIA, the Wireless Association, at: **http://www.ctia.org/wea**.

June Brings Focus on Lightning Safety

The summer season brings many people outdoors to enjoy the numerous activities available in Southern Oregon and Northern California. The summer season also brings an increased threat of thunderstorms to develop. If a thunderstorm developed nearby, do you know what you would do?

The NWS' annual Lightning Safety Week is from June 24-30, 2012. This week is designed to raise awareness about one of the most deadly weather phenomena. Each year, an average of 55 people are killed by lightning nationwide, while hundreds of others are permanently injured.

Don't be fooled by clear blue skies above you! Lightning strikes as far as 10 miles away from any rainfall both ahead of and behind any thunderstorm.

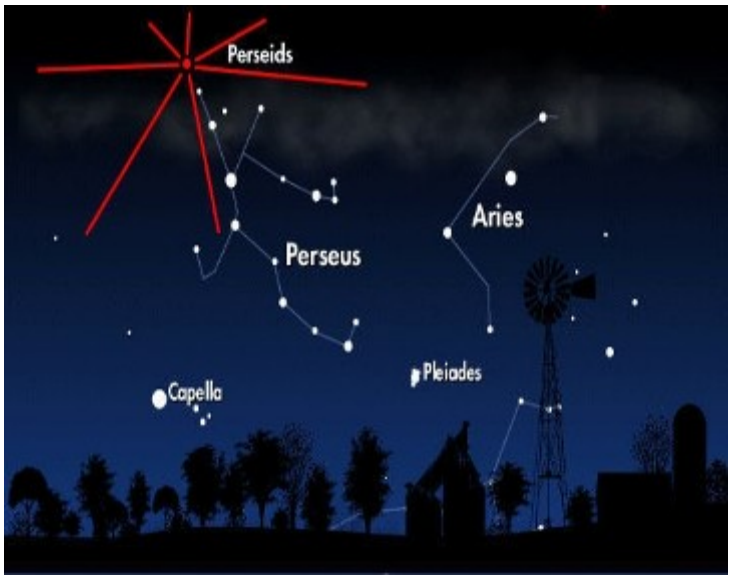
While the National Weather Service issues severe thunderstorm watches and warnings based on damaging winds or hail, watches and warnings are NOT issued for lightning. Look for darkening skies, increasing wind, or flashes of lightning to alert you that the weather may be changing. A battery-powered NOAA Weather Radio All Hazards will allow you to monitor any short-term forecasts that are issued for developing thunderstorms as well as any watches or warnings. To find out more, go to: **http://www.lightningsafety.noaa.gov**.

Summer's Meteor Showers Light Up the Night Sky

The Southern Delta Aquarids Meteor Shower begins July 18 and peaks July 28-29, producing 20 meteors per hour. The shower will then fade away by August 18. The shower will appear to radiate from the constellation Aquarius. From a dark location, the best viewing is to the east after midnight.

The annual Perseids Meteor Shower gets underway July 23 and is summer's most recognizable meteor shower. The best viewing will occur August 13 and 14 after midnight, with an estimated 60 meteors per hour. Unlike last year, the moon will be in its last quarter phase, but it's still best to find a location far away from city lights and look northeast. It is possible to see meteors as late as August 22 during the meteor shower.

On August 24, Neptune makes its closest pass to Earth and is fully illuminated by the Sun, appearing as a tiny blue dot in most telescopes. Also, check the Satellite Flybys Calendar on SpaceWeather.com for when the International Space Station passes overhead. This appears to look like a very bright star or planet arcing through the sky as it moves at a fast rate of speed.



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Visit Our Website!

http://www.weather.gov/medford

Our Vision

Professionals focusing on science, teamwork, and customer service to design and deliver the best decision-support information to our community.

Our Mission

Our team at the National Weather Service Office in Medford strives to deliver the best observational, forecast, and warning information through exceptional customer service, extensive training and education, maintaining quality electronic systems, and relying upon an outstanding team of weather spotters and cooperative observers. We do this within the overall mission of the NWS:

To provide weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community.

Our Values

Trust, Integrity, Professionalism, Service, Teamwork, Ingenuity, Expertise, and Enthusiasm.

About Us

The Weather Forecast Office in Medford, Oregon, is one of more than 120 field offices of the National Weather Service, an agency under the National Oceanic and Atmospheric Administration and the United States Department of Commerce. The Weather Forecast Office in Medford serves 7 counties in southwestern Oregon and 2 counties in northern California, providing weather and water information to more than a half-million citizens. We are also responsible for the coastal waters of the Pacific Ocean from Florence, Oregon, to Point St. George, California, extending 60 miles offshore. The office is staffed 24 hours a day, 7 days a week, and 365 days a year by a team of 26 meteorologists, hydrologists, electronic technicians, hydro-meteorological technicians, and administrative assistants, under the direction of Meteorologist-In-Charge John Lovegrove.